4x4 VGA Matrix

EXT-VGAAUD-444

User Manual

www.gefen.com

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Notice

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INTRODUCTION

Congratulations on your purchase of the 4x4 VGA Matrix. Your complete satisfaction is very important to us.

Gefen

Gefen delivers innovative, progressive computer and electronics add-on solutions that harness integration, extension, distribution and conversion technologies. Gefen's reliable, plug-and-play products supplement cross-platform computer systems, professional audio/video environments and HDTV systems of all sizes with hard-working solutions that are easy to implement and simple to operate.

The Gefen 4x4 VGA Matrix

The Gefen 4x4 VGA Matrix offers flexibility and convenience by routing high-quality VGA and Analog Audio from any of four VGA/audio sources to any of 4 VGA displays and audio devices.

The Gefen 4x4 VGA Matrix works with a wide variety of VGA sources such as computers, security cameras and DVRs. Every source is accessible at any time by any display by selecting it with the included IR remote, front panel buttons, or RS-232 control.

How It Works

Connect up to four VGA and Analog Audio sources to the 4x4 VGA Matrix's inputs. Connect the Matrix's VGA and Analog Audio outputs to 4 VGA displays and audio devices. Plug in the Matrix's power supply. You may now switch VGA and audio sources using the included IR remote, front panel buttons, or the built-in RS-232 serial port. LED lights on the front panel show the currently selected routes from the VGA sources to the VGA displays.

READ THESE NOTES BEFORE INSTALLING OR OPERATING THE 4X4 VGA MATRIX

- The 4x4 VGA Matrix does not transmit display information (EDID) to the source. Standard VESA resolutions should be output by most computers without the need of an EDID. If using a non-VESA standard resolution or if EDID is needed, an EDID storage and relay device is necessary. Gefen recommends the use of a DVI Detective (part# EXT-DVI-EDIDN) with two VGA to DVI adapters.

Features

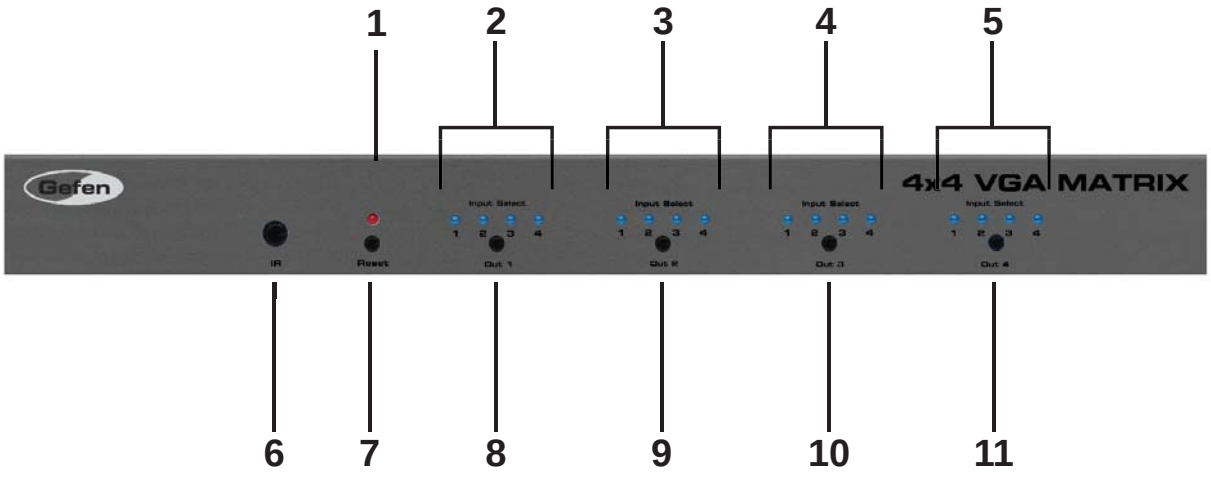
- Switches easily between any four VGA/Analog Audio sources
- Sends up to four VGA inputs with Analog Audio to any four displays with Analog Audio
- Supports high-definition VGA up to 1920 x 1200 resolution at 60 Hz
- LED lights on the front panel show selected VGA routes
- RS-232 Control
- Includes discrete IR remote control

Package Includes

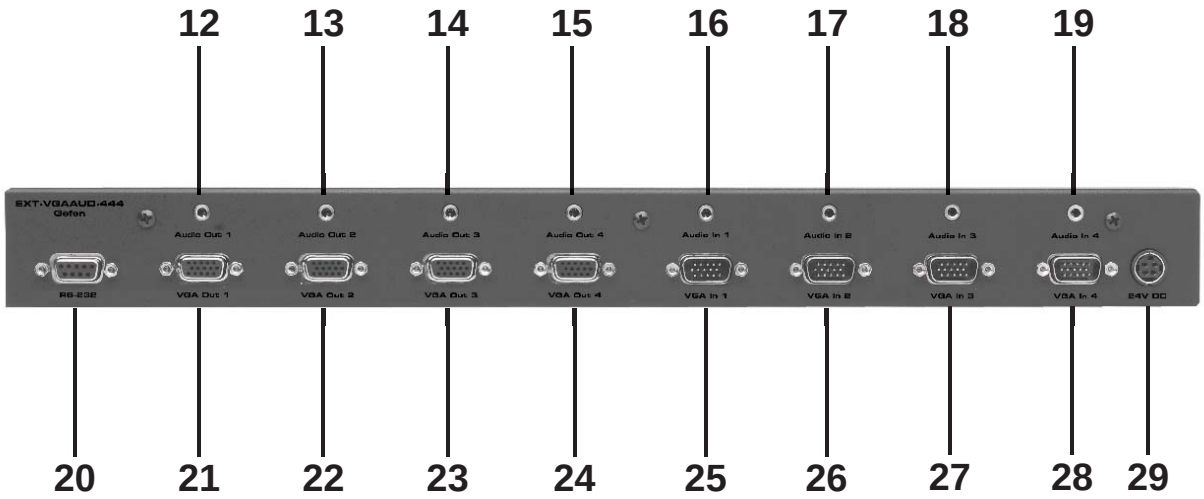
(1) Gefen 4x4 VGA Matrix
(4) 6 ft. VGA Cables (M - F)
(4) 6 ft. 3.5mm, mini-stereo Analog Audio Cables
(1) 24V DC Power Supply
(1) IR Remote Control Unit
(1) Set of Rack Ears
(1) User Manual

PANEL LAYOUT

Front Panel



Back Panel



PANEL DESCRIPTIONS

1 Power LED

This LED indicator glows RED when power is connected properly and sufficient power is being received by the Matrix.

2-5 Selected Input LED Indicators For Outputs 1-4

Each of the four output ports has an associated bank of 4 LED indicators that shows which input source 1-4 is active for that output. The currently selected input will be indicated by an active LED.

6 IR (Infrared) Receiver

This Receiver will accept commands for switching between VGA input devices using the included RMT-16IR remote control.

7 Reset Button

The Reset button momentarily interrupts power, rebooting the unit and resetting operational settings to defaults. This feature is useful if the Matrix somehow becomes unresponsive.

8-11 Input Selection Button For Outputs 1-4

This button will set the source (1-4) for the indicated output. Each labeled output on the front panel has this button. Each press of this button will cycle through the four input sources that will be routed to that output.

12-15 Audio Inputs For Inputs 1-4

This 3.5mm mini-jack analog stereo input will accept a single audio source for routing to the outputs. There are four inputs, one for each VGA input.

16-19 Audio Output For Outputs 1-4

This 3.5mm mini-jack analog stereo output will accept a single amplified audio device. There are four outputs, one for each VGA output.

20 RS-232 Serial Communications Port

This DB-9 serial communications port allows the Matrix to be controlled remotely by computers or control automation devices. Remote control devices send routing commands to the Matrix via this port in the form of ASCII characters. Please see page 10 for RS-232 Configuration.

21-24 VGA Inputs 1-4

These inputs will accept a single VGA source device. Any of these four VGA inputs can then be routed in any combination to the four VGA outputs.

25-28 VGA Outputs 1-4

These outputs will accept a single VGA output device. Any of these four VGA outputs can select and view one of the four VGA/Audio inputs.

29 24V DC Power Receptacle

Connect the included 24V DC power supply between this port and an open wall power receptacle.

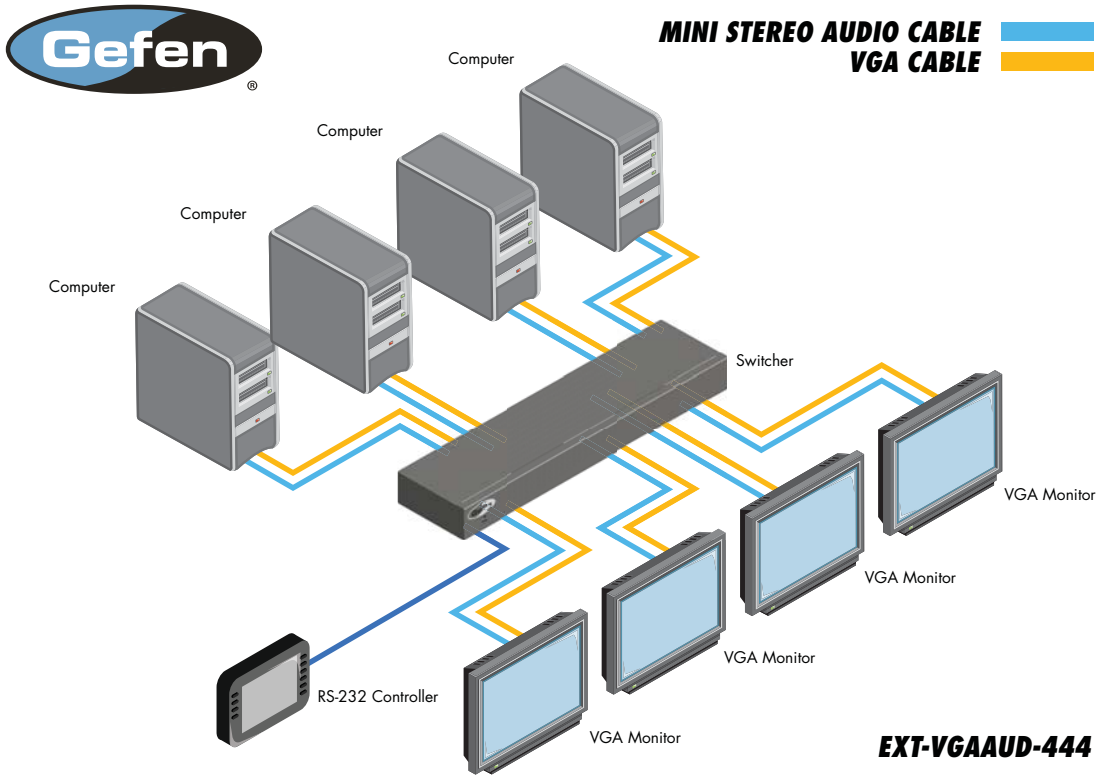
How to Connect the 4x4 VGA Matrix

1. Connect up to 4 VGA video sources to the 4x4 VGA Matrix inputs using the supplied VGA cables.
2. Connect up to 4 Analog Audio sources to the 4x4 VGA Matrix audio inputs using the supplied 3.5mm mini-jack stereo audio cables.
3. Connect up to 4 VGA capable displays to the 4x4 VGA Matrix outputs using user supplied VGA cables.
4. Connect up to 4 amplified Analog Audio devices to the 4x4 VGA Matrix audio outputs using user supplied 3.5mm mini-jack stereo audio cables.
5. Connect the included 24V DC power supply to the 4x4 VGA Matrix and an open wall power socket.

Routing Sources Using the Front-Panel Buttons

Each output on the 4x4 VGA Matrix has a push-button located on the front panel. Pressing this button will cycle through the 4 input sources. Press the button for each display repeatedly to select the desired source for viewing on that output.

Wiring Diagram for the 4x4 VGA Matrix



IR REMOTE DESCRIPTION

1. Remove battery cover from the back of the RMT-16-IR remote (see picture below).

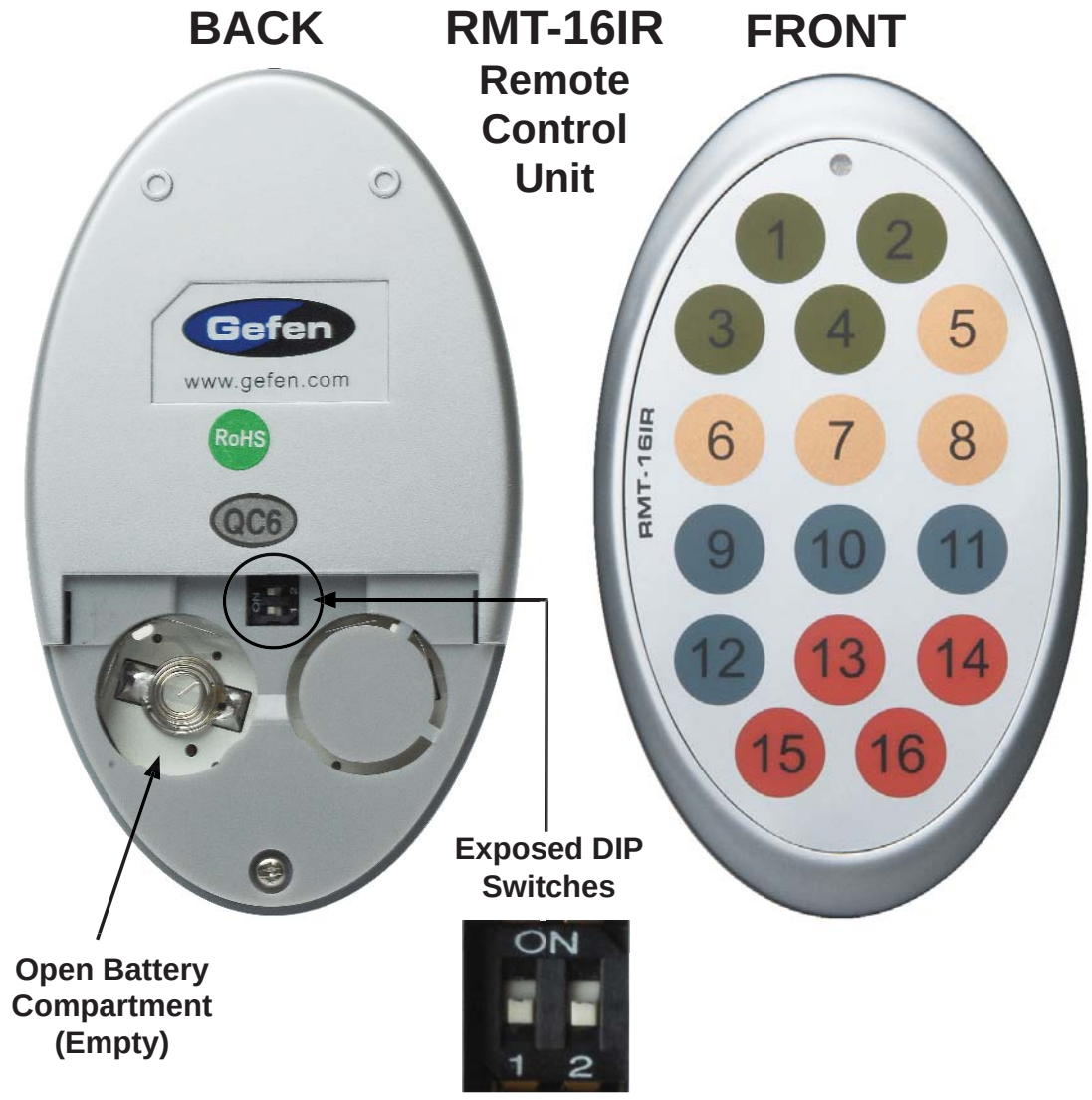
2. Locate the DIP Switches and verify that DIP switches 1 & 2 are in the down (OFF) position.

3. Insert the battery, holding the battery so that you can see the positive side facing up. The side that is not marked must be facing down.

4. Test the RMT-16-IR remote by pressing ONLY one button at a time. The indicator light on the remote will flash once each time you press a button.

WARNING: Do not press multiple buttons simultaneously and do NOT press buttons rapidly. The remote will need to be reset and steps 1-4 will have to be repeated.

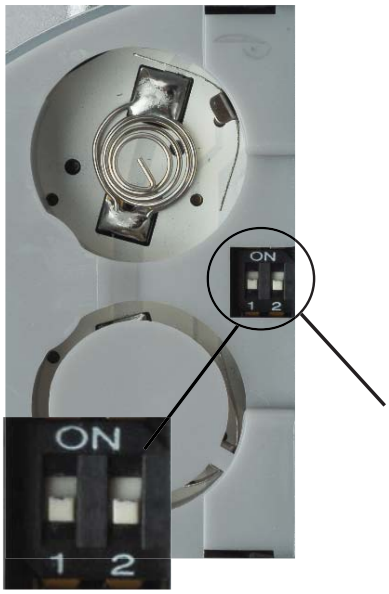
NOTE: The RMT-16-IR ships with two batteries. One battery is required for operation, the second battery is a spare. Please see the pictures immediately below for more information.

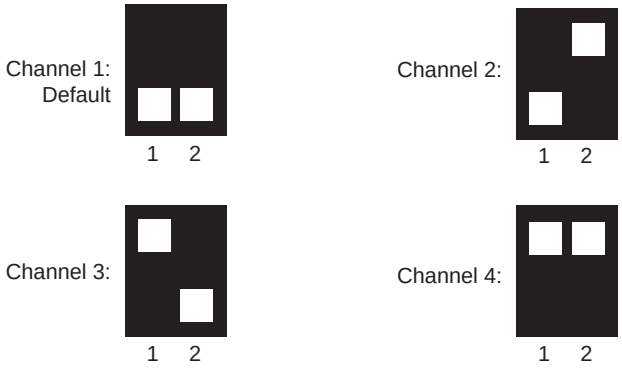


How to Resolve IR Code Conflicts

In the event that IR commands from other remote controls conflict with the supplied RMT-16IR remote control, changing the remote channel will alleviate this issue. The RMT-16IR remote control has a bank of DIP (Dual Inline Package) switches (see page 7) for configuring the remote channel that both units use to communicate. The 4x4 VGA Matrix can be put into a mode that will uses its front LED array to indicate which remote channel is being used and also give the user the ability to modify the currently used IR remote channel. These IR channel settings must exactly match each other for proper operation.

The DIP Switch bank on the RMT-16IR is located underneath the battery cover as shown on page 7.





Left: Close-up picture of the opened rear battery compartment of the RMT-16IR remote showing the exposed DIP Switch bank between the battery chambers.

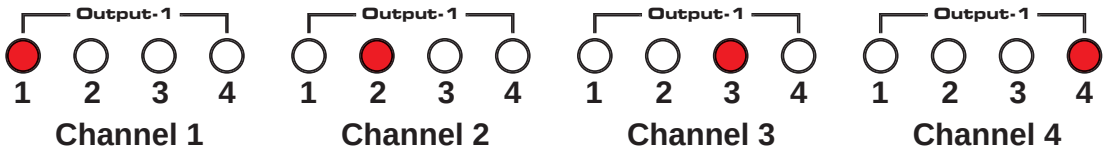
Follow these steps to place the 4x4 VGA Matrix into IR channel setup mode.

1. Turn on the 4x4 VGA Matrix.

2. Press and hold the front panel POWER button for 5 seconds to enter the setup mode (All output LED's except for Output 1 will be off). The Output 1 LED source indicator (page 4) will display the currently selected IR channel. The active LED, either 1, 2, 3, or 4, will indicate the IR channel being used.

3. Note the IR channel used on the RMT-16IR remote and press the Output 1 selector button to cycle to the IR channel that is being used.

4. Press the POWER button to save settings and exit IR channel setup mode.



IR Remote Control Key Mapping

Each input and output on the 4x4 VGA Matrix is represented by a button on the IR Remote Control unit. The table below lists the corresponding inputs and outputs.

RMT-16-IR Button	Source	Output	RMT-16-IR Button	Source	Output
1	1	1	9	1	3
2	2	1	10	2	3
3	3	1	11	3	3
4	4	1	12	4	3
5	1	2	13	1	4
6	2	2	14	2	4
7	3	2	15	3	4
8	4	2	16	4	4

Routing Sources using the IR Remote Control unit

Issuing a routing command is a two step process. The first step is to select the monitor where the source will be routed. The second step is to select the source.

Example 1
Route the source device connected to In 7 to the monitor connected to Out 3.

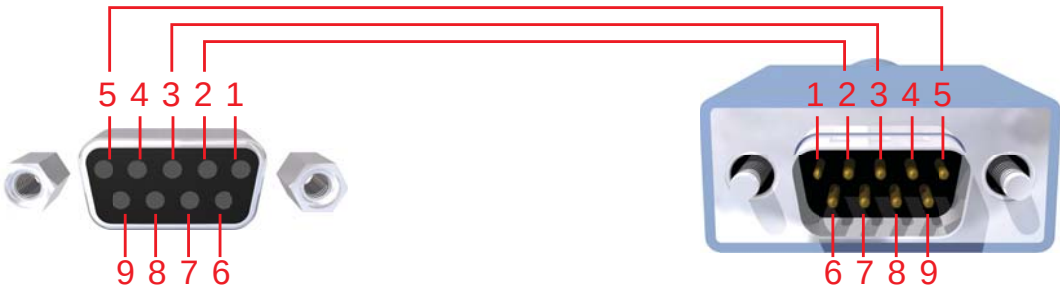
1. Press button 3 (monitor 3) on the IR remote control unit.
2. Press button 7 (source 7) on the IR remote control unit.

The source connected to In 7 will be routed to the monitor connected to Out 3.

Example 2
Route the source device connected to In 1 to the monitor connected to Out 1.

1. Press button 1 (monitor 1) on the IR remote control unit.
2. Press button 1 (source 1) on the IR remote control unit.

The source connected to In 1 will be routed to the monitor connected to Out 1.



Only Pins 2 (RX), 3 (TX), and 5 (Ground) are used on the RS-232 serial interface

Binary Table

ASCII	Corresponding RMT16-IR Button	Binary	ASCII	Corresponding RMT16-IR Button	Binary
1	1	0011 0001	9	9	0011 1001
2	2	0011 0010	a	10	0110 0001
3	3	0011 0011	b	11	0110 0010
4	4	0011 0100	c	12	0110 0011
5	5	0011 0101	d	13	0110 0100
6	6	0011 0110	e	14	0110 0101
7	7	0011 0111	f	15	0110 0110
8	8	0011 1000	g	16	0110 0111

Additional Features

ASCII	Command
X or x	Power Off
Y or y	Power On

RS-232 Settings

Bits per second 19200

Data bits 8

Parity ..... None

Stop bits 1

Flow Control ..... None

RACK MOUNT INSTALLATION

Rack mount ears are provided for installation of this unit into a 1U rack mount space.

1. Locate the side screws on the unit.
2. Remove the front 2 screws that are located closest to the front of the unit.
3. Using the removed screws, screw the rack mounting bracket into the unit.
4. Repeat the procedure on the opposite side of the unit.

1

2

3

4

SPECIFICATIONS

Video Amplifier Bandwidth	350 MHz
Input Video Signal	1.2 Volts p-p
Input Sync Signal	5 Volts p-p (TTL)
Horizontal Frequency Range	15-70 KHz
Vertical Frequency Range	30-170 Hz
Video Connectors	8 x HD15, female (4 input, 4 output)
Audio Connectors	8 x 3.5mm mini-stereo jack, female (4 input, 4 output)
RS-232 Control Port	9-pin female DB9
Power Supply	5V DC
Power Consumption	20 W (max.)
Dimensions	17” W x 3.5” H x 5.875” D
Shipping Weight	9.5 lbs.

WARRANTY

Gefen warrants the equipment it manufactures to be free from defects in material and workmanship.

If equipment fails because of such defects and Gefen is notified within two (2) years from the date of shipment, Gefen will, at its option, repair or replace the equipment, provided that the equipment has not been subjected to mechanical, electrical, or other abuse or modifications. Equipment that fails under conditions other than those covered will be repaired at the current price of parts and labor in effect at the time of repair. Such repairs are warranted for ninety (90) days from the day of reshipment to the Buyer.

This warranty is in lieu of all other warranties expressed or implied, including without limitation, any implied warranty or merchantability or fitness for any particular purpose, all of which are expressly disclaimed.

1. Proof of sale may be required in order to claim warranty.

2. Customers outside the US are responsible for shipping charges to and from Gefen.

3. Copper cables are limited to a 30 day warranty and cables must be in their original condition.

The information in this manual has been carefully checked and is believed to be accurate. However, Gefen assumes no responsibility for any inaccuracies that may be contained in this manual. In no event will Gefen be liable for direct, indirect, special, incidental, or consequential damages resulting from any defect or omission in this manual, even if advised of the possibility of such damages. The technical information contained herein regarding the features and specifications is subject to change without notice.

For the latest warranty coverage information, refer to the Warranty and Return Policy under the Support section of the Gefen Web site at www.gefen.com.

PRODUCT REGISTRATION

Please register your product online by visiting the Register Product page under the Support section of the Gefen Web site.

Rev A4

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This product uses UL listed power supplies.